creeping plants, and other modifications. Strange to say, modifications of flower form are omitted except in the occasional notes. The second is a physiological course dealing with the energies of the plant. This is more systematic in arrangement, and the experiments are tersely explained, but no new ideas or special hints are offered. The methods suggested for setting up some of the experiments are by no means the most practical, to mention only the growing of a seedling in a funnel, or extracting chlorophyll by boiling the leaf in alcohol over a Bunsen flame. As an indication of observational and experimental work that can be performed with simple apparatus, the book will be found serviceable, and the appendix contains a useful list of plants for growing.

Mr. Scott-Elliot brings to his subject an extensive knowledge of the ways of plants, and the instinct of imagination that enables him to appreciate the romance connected with the facts he has collected. He relates, however, no tales so fascinating as the accounts one has read of the adventures of collectors in quest of orchids or other rare plants, nor is any attempt made to depict that most attractive of all phases of plant life, the tropical forest. The author has selected most of his scenes from non-tropical regions, except where he writes of mangrove swamps and deserts. The various relationships between animals and plants, specialisations of flowers, fruit and seed, and of the plant generally are among the subjects treated, and economic botany receives a due share of recognition. There is no want of variety in the book; in fact, the fragmentary nature of the subject-matter constitutes its chief defect, and much of the information whets the appetite for more. The author has, we think produced his best results where, as in the sketch contrasting ancient and modern Britain, he pursues a continuous topic.

As a compilation of curious facts about plants, spiced with occasional grains of humour and light caustic satire, the reader will find much of passing interest and not a little that is worthy of closer attention. The best illustrations represent economic scenes, but a more romantic subject is shown in the picture reproduced on the preceding page.

There are various ways of appealing to the youthful mind, that adopted by the author of "The Green Gateway" being to arouse interest by copious allusions to magic, fairy work, and jewels. Although fairy tales may be useful to stimulate the imagination, it is doubtful whether they form a suitable medium in which to portray science. A tree and its parts form the central subject of the book, but it is probable that children will be most interested in the tales of the animal inhabitants and visitors of the tree, that are attractively described without reference to fairies and magic.

## PROF. A. F. W. PAULSEN.

It is with great regret that we chronicle the death of Prof. Adam F. W. Paulsen, which occurred in Copenhagen on January 11. Born in 1833 at Nyborg, in the island of Fünen, Paulsen studied at the University of Copenhagen, in which town he subsequently held the position of professor of physics at the Lycée. In 1884 he was appointed director of the Danish Meteorological Institute, one of the most important official meteorological positions, in view of the fact that the Danish Institute is responsible for the meteorological organisations of Greenland and Iceland. He was also a member of the Permanent International Meteorological Committee.

Among Prof. Paulsen's most important scientific labours must be reckoned his researches on the aurora borealis. His attention was first actively directed towards this phenomenon during his stay at Gothaab in 1882–3 as head of a scientific expedition sent out by the Danish Government. The question of the aurora remained one of absorbing interest to Paulsen, and in 1899–1900 he obtained from the Government the means for equipping an expedition to visit Iceland for the purpose of studying the spectrum of the aurora with the aid of modern photographic methods. At the comparatively advanced age of sixty-six years he assumed personal command of the expedition, and brought back with him some highly interesting results. He read a brief account of these before the British Association at the Southport meeting in 1903, which he attended as a member of the Permanent International Meteorological Committee.

As director of the Danish Meteorological Institute, Prof. Paulsen was the head of that meteorological organisation of which the area of observation lies nearest to the North Pole. He never ceased to point out the intimate connection which exists between the meteorological conditions of Greenland and Iceland and those prevailing over Europe, and it is largely owing to his efforts that, after many years of discussion and negotiation, Iceland has at length been brought into telegraphic communication with Europe. The daily service of meteorological messages which was established shortly before his death is likely to prove of great value both in the practical matter of forecasting and in the study, from the scientific point of view, of the permanent Icelandic low-pressure system and its influence on the weather of north-western Europe.

Prof. Paulsen was a familiar figure at international scientific meetings, where his charm of manner, combined with great accuracy of judgment and a clear mode of expression, rendered him deservedly popular. His last visit to this country occurred in the summer of 1904, when he attended the meeting of the International Association of Academies as delegate of the Royal Danish Society of Sciences.

## NOTES.

At the annual meeting of the British Science Guild, to be held at 4 p.m. on Monday next, January 28, at the Mansion House, under the presidency of the Lord Mayor, the Right Hon. R. B. Haldane will deliver an address in relation to the work of the Guild. Other speakers will probably be the Hon. and Rev. E. Lyttelton, Sir David Gill, Sir Wm. Mather, Sir Henry Roscoe, Sir Philip Magnus, M.P., Prof. Meldola, Mr. A. Haworth, M.P., Mr. Mosely, and Mr. Verney.

We regret to see the announcement that Miss Agnes M. Clerke, the gifted author of several well-known works on astronomical subjects, died on January 20 at the age of sixty-four years. The first important work on astronomy written by Miss Clerke was the "Popular History of Astronomy during the Nineteenth Century," published in 1885. Other works of outstanding merit are "The System of the Stars" (1890) and "Problems in Astrophysics" (1903). Her command of language and acquaintance with astronomical literature were extraordinary, and empowered her to produce books distinguished by literary finish as well as by scientific value. Miss Clerke was a most industrious compiler of methods and results of astronomical investigation. The "History of Astronomy" was her most valuable contribution to scientific literature; and her later works, though marked by the same inspiring style, dealt with the more special aspects of astrophysics. In reading these works, it is impossible not to feel regret that an enthusiasm so great should have lacked the advantage of a laboratory training, which would have enabled Miss Clerke to estimate the real value of the various researches successfully recorded. "No one writing a history of modern astronomy," says a correspondent of the *Times*, "can fail to acknowledge the great debt owed to the masterly array of facts in her 'History.' No worker in the vast field of modern sidereal astronomy opened by the genius of Herschel and greatly widened by the application of the spectroscope to the chemical and physical problems of the universe lacked due recognition by Miss Clerke, who performed as it seemed no other writer could have done the work of collation and interpretation of this enormous mass of new material, ever pointing the way to new fields of investigation, often by one pregnant suggestion sweeping aside a whole sheaf of tentative conjectures and indicating, if not the true line—for in many cases the truth is yet to seek—at least a plausible and scientific line well worth pursuing."

THE Rothamsted Experimental Station (Lawes Agricultural Trust) has received a donation of 2000*l*. from the Permanent Nitrate Committee, to be invested and added to the general endowment fund of the station. A donation of one hundred guineas has also been received from the Fertiliser Manufacturers' Association. During the past summer the station entered into occupation of the "James Mason" Bacteriological Laboratory, the gift of Mr. J. F. Mason, M.P. The society for extending the Rothamsted experiments, which was formed to obtain funds wherewith the experimental station might enlarge the scope of its work and initiate further agricultural investigations, has further received during the past year subscriptions and donations amounting to 240*l*. Further subscriptions are still urgently needed to secure a more adequate staff, and may be addressed to the Secretary of the Rothamsted Experimental Station, Harpenden, Hertfordshire.

A REUTER message from The Hague, dated January 22, reports that a wave has destroyed the southern coast of the island of Simalu, near Sumatra. The island of Simalu has nearly disappeared. Violent earthquake shocks have occurred daily.

A REUTER telegram from Vyernyi (Turkestan) states that the eclipse of the sun on January 14 was not observed there owing to cloudy and foggy weather.

THE second National Poultry Conference will be held on July 9–11 at University College, Reading. The honorary secretary of the conference is Mr. Edward Brown, 12 Hanover Square, W.

DR. H. R. MILL has been elected president of the Royal Meteorological Society for the ensuing year, and Mr. F. C. Bayard and Mr. H. Mellish secretaries of the society. At the annual general meeting of the society on January 16, Mr. Richard Bentley, the president, on behalf of the members of the council, presented an illuminated address to Mr. William Marriott in recognition of his services as lecturer.

THE annual general meeting of the Iron and Steel Institute will be held on Thursday and Friday, May 9 and 10. The annual dinner will be held—under the presidency of Sir Hugh Bell, Bart.—in the Grand Hall of the Hotel Cecil on May 10. The council will shortly proceed to award Carnegie research scholarships, and candidates must apply before February 28. The awards will be announced at the general meeting.

THE Explosives in Coal Mines Order of December 17, 1906, has been issued by the Home Office in the form of a pamphlet of sixty-six pages (price 4½*d*.). It contains full details of the composition of the fifty-eight explosives the use of which is permitted in unsafe collieries if certain specified conditions be observed.

THE pipe line conveying petroleum from Baku to the Black Sea has been completed. It is 550 miles long, and is capable of passing 400,000,000 gallons of oil yearly. Another important oil-pipe line has been built for transporting Texas and California petroleum across the Isthmus of Panama. It is 8 inches in diameter and fifty-one miles long.

ON Tuesday next, January 29, Prof. A. C. Seward will commence a course of two lectures at the Royal Institution on "Survivals from the Past in the Plant World," and on Thursday, January 31, Major P. A. MacMahon will deliver the first of two lectures on "Standards of Weights and Measures." The Friday evening discourse on February 1 will be delivered by Sir Almroth E. Wright, on "The Methods of Combating the Bacteria of Disease in the Interior of the Organism."

THE thirty-eighth general meeting of the German Anthropological Society will be held in Cologne in August next. It is proposed that this meeting should be constituted an international congress, and the Cologne Anthropological Society has issued a cordial invitation to fellows of the Anthropological Institute and others interested in anthropology and archæology to attend the congress. It is further proposed to arrange a tour of two or three weeks in the Low Countries and France to take place after the congress. During this tour places of the greatest interest from an anthropological point of view will be visited. In case a section of the visitors would prefer to make a tour in Germany, the authorities state that they will consider the possibility of carrying out any proposition they may receive. A complete programme will be published very shortly. Meanwhile, fellows of the institute and other students of anthropology and archæology who would like to attend this congress are requested to communicate with the secretary of the Anthropological Institute, 3 Hanover Square, W.

THE Faraday Society, the object of which is to promote the study of electrochemistry, both pure and applied, and also the study of chemical physics, is endeavouring to develop this latter side in the hope that the physical-chemical work done in this country may be published in its Transactions instead of being published in various journals, and much of it abroad. With this object in view the society held a meeting on January 15 to discuss the electron theory as applied to conduction in electrolytes, and on Tuesday, January 29, there will be a meeting at which a general discussion on osmotic pressure will take place. Prof. Armstrong will be in the chair, and the Earl of Berkeley will exhibit and describe his apparatus for the direct measurement of osmotic pressure. Mr. W. C. D. Whetham will speak on indirect methods of measuring osmotic pressure, Dr. T. M. Lowry on osmotic pressure from the standpoint of the kinetic theory, and a paper by Prof. Kahlenberg is expected upon the bearing of osmotic-pressure experiments upon the conception of the nature of solutions. The society invites all who are interested in the subject to be present. The meeting will be held, as usual, in the library of the Electrical Engineers, 92 Victoria Street, S.W.

A RECEPTION and exhibition of recent progress in science was held by the New York Academy of Sciences in conjunction with the American Museum of Natural History on December 28 and 29, 1906, and, for the benefit of the public, the exhibition was continued daily until January 14. The 353 exhibits were arranged in eighteen sections, covering nearly every department of natural knowledge, and the exhibition as a whole was a tribute to the organising powers of the managing committee. The New York Academy of Sciences is one of the oldest among American societies, having been established in 1817 as the Lyceum of Natural History. It embraces all branches of science; its scope, in fact, is similar to that of the older European societies. Its publications have long been familiar to readers of NATURE. Its membership includes a maximum of fifty honorary members elected from representative men of science throughout the world, more than 200 corresponding members, who are expected to communicate the results of their researches to the academy from time to time, and the active and associate members. Active membership is not restricted to specialists, but is open to those who take a general interest in science. Fellows are chosen from among the active members in recognition of scientific attainments or services.

A DEPUTATION representing the Infants' Health Society waited upon Mr. John Burns, M.P., President of the Local Government Board, on January 17, with reference to the supply of sterilised milk to infants. Several local authorities have recently established depôts for the supply of sterilised milk for infant feeding. The opinion has been expressed that in so doing the authorities have exceeded their legal powers, and Mr. Burns has therefore intended to introduce a Bill to legalise their action. The Infants' Health Society, believing that sterilisation is of doubtful value, and that refrigeration is preferable, asked that before sterilisation was sanctioned an investigation should be made by a committee of experts which it is proposed to form. Sir Thomas Barlow, Sir Lauder Brunton, and Mr. Mayo Robson having detailed the views of the society, Mr. Burns in reply said that he knew that sterilisation was not the last word in dealing with the problem of the milk supply, and at present he saw no reason why a choice should not be given between the two methods of sterilisation and refrigeration, and why he should not embody in his Bill the power being given to local authorities to sterilise milk. With regard to the investigation of the question by a joint committee, he would be glad if such a committee would communicate to him the results of their investigations.

THE valuable collection of British and foreign Algæ made by Mr. E. M. Holmes, of the Pharmaceutical Society, has, through the generosity of Mr. William A. Cadbury, been acquired for the botanical department of the University of Birmingham. The collection is a very large one, including about 13,000 specimens, and constituting the produce of more than thirty years of Mr. Holmes's activity as a collector. The British portion of the collection is of exceptional value, owing to the singularly prolific nature of Mr. Holmes's personal investigations. When he commenced his work thirty-five years ago there were some 400 species of British marine Algæ known. There are now about 750; and 225 of the new species were distributed by Mr. Holmes himself, in eleven fasciculi. Of these, twenty-five sets only were issued, and with three or four exceptions these sets were acquired for national collections or British or foreign universities. As some of the best collecting grounds of the past, such as those near Weymouth, Plymouth, and Falmouth, have been in large measure spoilt by extensions of building areas, the difficulties in the way of making a complete collection are of increasing magnitude, while three or four of the specimens included in the collection are unique. The foreign portion of the collection is as complete as could have been made in the period, and includes authentic sets sent out by all the best-known algologists, such as Harvey, Agardh, Bornet, Thuret, Crouan, Ferguson, and others. Here also not a few of the specimens are types, having been used as the basis of published specific descriptions. As Mr. Holmes had long planned that his collection should be fitted for public rather than private ownership, exceptional care has been taken throughout in respect of display and mounting, and different species or different varieties are in no case included upon the same sheet. The donor also states, as a condition of gift, that the collection shall be accessible to algologists generally for any purposes of serious study or of reference.

BRITISH sea-fisheries, and more especially those of the North Sea, form the subject of an instructive article in the January number of the *Quarterly Review*. After a survey of the results of earlier investigations, the author discusses those of the last three or four years, which are based on much more precise information than was available in the case of the former. Starting with the axiom that a given area of the sea can nourish only a limited amount of fish, it is pointed out that if the methods of capture tell more heavily on one kind than on another it is quite probable that valuable species may be largely displaced by inferior ones. This seems to be the condition of affairs in the North Sea, where the worthless dab is increasing at the expense of the plaice. Possibly the remedy for this is the introduction of young plaice. Subsequently, in discussing the excessive destruction of young fish which undoubtedly takes place, the question is raised whether this has really any marked effect on the adult population; certainly it does not appear to do this in the case of the herring. Be this as it may, it seems clear that the Grimsby supply is largely maintained by drawing on immature fish. Admitting this, it has yet to be proved that the destruction of young plaice is not the consequence rather than the cause of the depletion of the grounds. If this be so, it follows that the undersized-plaice problem must be considered from a fresh standpoint—the expectation that by checking the capture of young fish the sea will be replenished being obviously untenable. Apart from the grave condition of that of the North Sea, the author expresses the opinion that the condition of British fisheries generally was never better than at present. Obviously, however, interference of some kind must eventually be necessary in nearly all cases, and if this be so it is of the utmost importance that our knowledge of the fishery problem in all its aspects should be made as nearly as complete as possible while prosperity lasts. The Government is, therefore, urged to increase rather than slacken its efforts and support.

IN connection with the preceding note, it may be mentioned that there has been recently installed in the central hall of the Natural History Museum an exhibit prepared by the Marine Biological Association, Plymouth, to illustrate the growth of plaice and pollack, and the methods of ascertaining the ages of individual specimens of each.

In the case of the former, the age estimate is made by counting the annual rings of growth in the ear-bone or otolith, whereas in the latter the scales are employed for the same purpose. Enlarged photographs of these structures in the two species are exhibited.

THE Colonial Office has just issued a report of the advisory committee of the Tropical Diseases Research Fund for 1906. This committee was constituted in July, 1904, and consists of Sir T. Barlow, Sir M. Foster, Sir P. Manson, Sir R. Moor, Surgeon-General Bransfoot, and Messrs. Holderness, Lucas, and Read, with Sir West Ridgeway as chairman. The revenue of the fund for 1906 amounted to 3000*l.*, and was made up of contributions from the Imperial Government, Government of India, Rhodes trustees, and various colonial Governments. The expenditure consisted of a grant of 500*l.* to the Liverpool School of Tropical Medicine, of 1000*l.* to the London School, of 750*l.* to the University of London, and of 500*l.* to the Royal Society. The report includes summaries of work done during 1906. Mr. Leiper, the helminthologist of the London School, has investigated the life-history of the *Dracunculus medinensis*, or guinea-worm, the cause of a disease widely disseminated in tropical Africa. The embryo, after leaving the human body, develops into larvæ, which enter the body of a small fresh-water crustacean of the genus Cyclops. The larvæ do not spontaneously leave the Cyclops, but if the crustacean be treated with 0·2 per cent. hydrochloric acid it dies, and the larvæ are awakened into activity and escape. This suggests that man is infected by swallowing water containing infected Cyclops, and by feeding monkeys with infected Cyclops guinea-worm infection was produced. Dr. Wenyon describes a new species of spirochæte of the mouse, and summaries of investigations on the value of arsenical preparations in sleeping sickness and on other subjects are also given.

No. 9 of the *Kew Bulletin*, completing the volume for the past year, contains a list of marine algæ from Corea, by Mr. A. D. Cotton, and a decade of new orchids named by Mr. W. E. Rolfe. Mr. W. B. Hemsley communicates a note on a new fruit from Uruguay, about the size and shape of a very small apple, having an agreeable taste and said to possess remarkable digestive properties. The plant belongs to the Sapotaceæ, and receives the name of *Pouteria suavis*. Short notices of the dye substance known as barwood, now referred to *Pterocarpus Soyauxii*, and varieties of the Chinese drug, "huan-ch'i," furnished by species of Astragalus, are contributed by Mr. J. M. Hillier and Mr. E. H. Wilson.

A PAPER on the planting of high moorlands appears in the Transactions of the Royal Scottish Arboricultural Society, vol. xx., part i., wherein the writer, Sir John Stirling-Maxwell, advocates a Belgian system of utilising the turfs cut out from the drains as mounds in which to plant out seedlings. A variety of *Pinus montana*, grown largely in the Pyrenees, is mentioned as a tree that is likely to grow well on high moorland. Dr. R. S. MacDougall contributes an entomological article on the life-history of the large larch sawfly, *Nematus erichsoni*, and Mr. E. S. Grant describes a method of trapping the pine weevil, *Hylobius abietis*. A useful set of measurements indicating the increase during fourteen years of a larch crop growing at Murthly, Perthshire, is given by Mr. A. Murray, and a table for the amount of creosote absorbed by various timbers is furnished by Mr. W. B. Havelock.

IN the *Journal de Physique* for December, 1906, M. U. Schoop describes experiments for determining the lines of flow in electrolytes and the distribution of currents in accumulators. The method consists in using an analyser formed of two electrodes of spongy platinum placed close together and connected with a galvanometer; when the electrodes coincide in direction with the equipotential lines no deviation is shown. In this way the lines of the field are capable of being plotted, and a further experimental method enables the intensity of the current to be found at different points.

IT has been shown by Lord Rayleigh that there are certain cases in which an oscillation can be maintained or intensified by a periodic force of double its frequency, as, for example, a stretched string excited by a longitudinal force of half the period of lateral vibration. In the *Quarterly Journal of Mathematics*, 148 (1906), Mr. Andrew Stephenson extends this result by discussing cases in which the ratio of the frequencies, instead of being 2, is one of the numbers 1, $\frac{2}{3}$, $\frac{1}{2}$, $\frac{2}{5}$, &c., *i.e.* a fraction having 2 as its numerator.

IN the Manchester Memoirs, l. (1906), 8, Mr. R. F. Gwyther discusses the range of Stokes's progressive waves of finite amplitude. By studying the paths of the fluid particles, the author shows that the class of wave in question is capable of indefinite propagation with uniform velocity; moreover, the motions of the particles can be determined, within a certain range, to any required degree of accuracy by means of series. There is a limit to the height of the waves when their profile shows a finite angle at the crest, and this "highest wave" is the same as that investigated by Mitchell in 1893.

THE interest taken by American mathematicians in what is done in other countries is well illustrated by Prof. Virgil Snyder's short article on the mathematical tripos of 1906 in the Bulletin of the American Mathematical Society for December, 1906. The article contains an outline of the general characteristics of the various parts of the tripos and the number and subject-matter of the papers in each part. It is illustrated by specimens of the papers reprinted by permission, one in applied mathematics from the first four days, one in pure mathematics from the higher part of part i., and one on divisions ii.–iv. from part ii. Reference is made to the fact that in part i. the "riders" generally have only a very distant connection with the bookwork.

THE "Notes in Mathematics," edited by Prof. Morley, form a pleasing addition to the dry details of class-lists and time-tables published in the Johns Hopkins University Circular, 1906, No. 9. The notes in question deal with the linear relations among the minors of symmetric determinants, by Dr. A. B. Coble; the use of a special type of rational curve (the De Jonquières curve) for the illustration of binary syzygies, by Mr. A. E. Landry; curves with a directrix, by Mr. Clyde S. Atchison; and a note on the determination of multiple points of rational algebraic curves, by Mr. H. Ivah Thomsen. These notes bear testimony to Prof. Morley's activity in organising university research, more especially seeing that the *American Journal of Mathematics* is also issued under his editorship by the Johns Hopkins Press.

A RECORD has been set up in Bendigo for the greatest depth at which gold has been found, gold ore having been struck in driving a cross-cut at 4254 feet at the Victoria quartz mine. The record find in depth previously was held by the New Chum mine, at 4226 feet.

We have received from Dr. G. F. Kunz a collection of papers relating to the lilac-coloured spodumene, known as kunzite, from California. These spodumene crystals are of extraordinary size, transparency, and beauty, and the various papers recording the remarkable discovery were noticed in Nature in 1903 (vol. lxviii., p. 460).

The magnificent collection of jadeite and nephrite presented by the late Mr. Heber R. Bishop to the Metropolitan Museum of Art of New York has, as stipulated in the gift, been duly catalogued. The exhaustive catalogue, of which only one hundred copies have been prepared, is described by Dr. G. F. Kunz in the Bulletin of the Metropolitan Museum of Art, 1906. It covers a thorough investigation of the subject. No copies were sold, the entire edition having been distributed amongst the important public institutions of the world.

Prof. W. Galloway, who has invented many valuable improvements in mining methods and machinery, has devised an ingenious apparatus for automatically stopping and re-starting mine waggons, and recently read a paper describing the invention to the North of England Institute of Mining Engineers (Newcastle-upon-Tyne, 1906). The points at which this appliance can be most usefully employed are at the weighing machine between the top of the shaft and the screens, and in front of the cage at the top and bottom of the shaft. By it, all the weighing on the surface and the loading and unloading of the cages have been effected automatically for upwards of a year at a colliery in South Wales.

At the Institution of Mining and Metallurgy a paper was read on January 17 by Mr. E. A. Smith on the assay of silver bullion by Volhard's ammonium thiocyanate method. It has recently been the practice to modify slightly the method of finishing the assay by adding sufficient ammonium thiocyanate to the check assay to intensify the red colour of the ferric thiocyanate, and to use this colour as a standard of comparison. Experiments described by the author proved that, by finishing the assay in this way, a limit of accuracy of less than 0·1 per 1000 of silver can be obtained by Volhard's method. Working in the ordinary way, the limit of accuracy is 0·2 to 0·3 per 1000.

Attention was directed by Mr. Bennett H. Brough in his lectures on perils underground (Journal of the Society of Arts, January 11) to the fact that, whilst from time to time some terrible colliery explosion occurred claiming scores of victims at once, every-day fatalities from falls of roof added up to a far higher total. This statement is strikingly borne out by the Home Office tables of fatal accidents and deaths in and about the mines and quarries of the United Kingdom during the year 1906, of which we have received an advance proof. The total number of deaths caused by explosions of fire-damp or coal-dust was fifty-four, and that caused by falls of ground was 547. Of other deaths, sixty-eight were due to shaft accidents, 329 to miscellaneous accidents underground, and 135 to accidents on the surface. Altogether there were 1133 deaths from accidents as compared with 1159 in 1905.

Mr. P. E. Radley, of 30 Theobald's Road, London, has compiled and published at one penny a booklet of 64 pages dealing with metric and English weights and measures. The publication may be regarded as a modern "table book," and should serve to popularise the decimal system of coinage and weights and measures generally.

In the *Times* of January 15 Dr. H. R. Mill gives the results of a preliminary discussion of the rainfall observations of the British Isles during the past year. The production of such a general summary in so short a time is at least a remarkable performance, and highly creditable to the British rainfall organisation; the preparation for final publication, after careful scrutiny, of some 4000 records will take about six months to complete. Dr. Mill states that the year 1906 was not remarkable with respect to annual rainfall, "unless it be remarkable to coincide almost exactly with the average, the portions of the country which were unduly wet compensating for those which were unusually dry." This remark calls to mind one made by Dr. Shaw, referring to the *Weekly Weather Report,* at one of the recent useful discussions at the Meteorological Office, viz. that the *average* value was apparently one not very likely to occur. The mean of the percentage figures given in Dr. Mill's diagrams shows that the general rainfall of England and Wales was exactly the average, while that of Scotland shows an excess of 9 per cent., and that of Ireland a deficiency of 4 per cent. The special monthly features were principally a wet January and dry April in the south of England, a wet May in Scotland and the north of England; a storm with excessive rainfall in the south-east half of England on June 28; a very dry summer (with the exception of a wet August in Scotland); a wet October; and heavy snowfall near the end of December.

We have received a copy of the January issue of Mr. C. Baker's (244 High Holborn) classified list of second-hand instruments. Men of science and teachers who are requiring microscopes, surveying instruments, telescopes, spectroscopic apparatus, barometers, or other instruments or accessories will do well to examine this catalogue.

Messrs. Reynolds and Branson, Ltd., of Leeds, have sent us a series of their recent issues of illustrated catalogues of chemical and physical apparatus which they are prepared to supply. Every requirement of the teacher of science and of the investigator appears to have been borne in mind in preparing the catalogues, which are models of clear arrangement for easy reference.

Messrs. Longmans, Green and Co. have issued an abridged edition of the late Mr. F. W. H. Myers's "Human Personality and its Survival of Bodily Death." The abridgment and editing have been done by Mr. Leopold H. Myers. The original work was reviewed at some length by Sir Oliver Lodge, F.R.S., in our issue of June 18, 1903, and readers may be directed to the account there given of the line of argument followed by Frederic Myers. The price of the present book is 10*s*. 6*d*. net.

An address on the "Modern Theories of Electricity and their Relation to the Franklinian Theory," delivered in Philadelphia by Prof. E. Rutherford at the celebration in April of last year, under the auspices of the American Philosophical Society, of the 200th anniversary of the birth of Benjamin Franklin, is published in the official record of the celebration. In his address Prof. Rutherford gave a comprehensive review of the development of the conceptions which have been formed of positive and negative electricity from the time of the one-fluid theory of Franklin to the present day, and briefly summarised recent views of the constitution of matter from the standpoint of the theory of electrons.